

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-20 are pending in the application, with claims 1 and 11 being the independent claims. Claims 1 and 11 are sought to be amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

Barton and Yeap

In the Office Action, claims 1-3, 5, 10-12, 14, and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton, et al, U.S. Patent No. 6,654,431 (Barton) in view of Yeap, et al., U.S. Patent No. 6,456,657 (Yeap). Applicant respectfully traverses this rejection.

To establish a *prima facie* case of obviousness, three criteria must be met. First, some motivation or suggestion must exist in the reference or in the knowledge generally available to one of ordinary skill in the art to modify the reference. *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991). Second, the reference must reveal a reasonable expectation of success. *Id.* Finally, the reference must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981 (CCPA 1974).

The combination of Barton and Yeap does not teach or suggest each and every element of independent claims 1 and 11. As noted by the Examiner, Barton does not disclose "wherein each of the plurality of demodulators ... is configured to utilize a different sampling rate" and "wherein each of the plurality of demodulators utilizes a different sampling rate," as recited in amended independent claims 1 and 11, respectively. (Office Action, p. 3) Furthermore, Barton describes the use of an identical size discrete Fourier transform in each receiving path. (Barton, FIG. 10; col. 14, lines 26-36). Thus, Barton does not teach or suggest "wherein each demodulator includes a discrete Fourier transform module and at least two of the plurality of demodulators have different discrete Fourier transform sizes" and "wherein at least two demodulators use different size discrete Fourier transforms," as recited in amended independent claims 1 and 11, respectively.

Yeap does not overcome these deficiencies of Barton. Yeap describes a method and apparatus for processing an input signal for transmission and/or storage using an analysis filter bank to decompose the signal into sub-band signals. (Yeap, Abstract). The analysis filter bank comprises a multiresolution filter implementing Discrete Wavelet Transformation. (Yeap, Abstract). Thus, in Yeap, the received signal is not "a multi-tone, multi-band signal modulated using an inverse discrete Fourier transformation," as recited in Applicant's amended independent claims 1 and 11. In fact, Yeap was designed to overcome "the disadvantages" of discrete multi-tone transmission (DMT) systems. (Yeap, Background).

Furthermore, in the decoder of Yeap, the sub-band signals, y^*_0 , y^*_1 , and y^*_2 are fed into a single inverse discrete wavelet transform 67. (Yeap, FIG. 6, col. 9, lines 24-

30). Thus, like Barton, Yeap does not teach or suggest "wherein each demodulator includes a discrete Fourier transform module and at least two of the plurality of demodulators have different discrete Fourier transform sizes, and wherein the plurality of demodulators are configured to perform demodulation in parallel," as recited in amended independent claim 1. Furthermore, like Barton, Yeap does not teach or suggest "demodulating, in parallel each of the plurality of data signals in a separate demodulator using a discrete Fourier transform, wherein each demodulator utilizes a different sampling rate and wherein at least two demodulators use different size discrete Fourier transforms," as recited in amended independent claim 11.

For at least the foregoing reasons, independent claims 1 and 11 are patentable over the combination of Barton and Yeap. Claims 2, 3, 5, and 10 dependent from claim 1 and claims 12, 14, and 17 depend from claim 11. For at least the above reasons, and further in view of their own features, claims 2, 3, 5, 10, 12, 14, and 17 are patentable over the combination of Barton and Yeap. Reconsideration and withdrawal of this rejection is therefore respectfully requested.

Barton, Yeap, and Allpress

Claims 4 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Yeap as applied to claim 1, and further in view of Allpress, et al, U.S. Patent No. 6,496,546 (Allpress). Applicant respectfully traverses this rejection.

Claim 4 depends from claim 1 and claim 13 depends from claim 11. Allpress does not overcome all of the deficiencies of Barton and Yeap relative to claims 1 and 11, described above. For at least these reasons, and further in view of their own features, claims 4 and 13 are patentable over the combination of Barton, Yeap, and Allpress.

Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Yeap, and Ho

Claims 6-8 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Yeap as applied to claim 5 and further in view of Ho, et al, U.S. Patent No. 5,317,596 (Ho). Applicant respectfully traverses this rejection.

Claims 6-8 depend from claim 1 and claim 15 depends from claim 11. Ho does not overcome all of the deficiencies of Barton and Yeap relative to claims 1 and 11, described above. For at least these reasons, and further in view of their own features, claims 6-8 and 15 are patentable over the combination of Barton, Yeap, and Ho. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Yeap, and Agee

Claims 9 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Yeap as applied to claim 1 and further in view of Agee, et al, U.S. Patent No. 6,128,276 (Agee). Applicant respectfully traverses this rejection.

Claim 9 depends from claim 1 and claim 16 depends from claim 11. Agee does not overcome all of the deficiencies of Barton and Yeap relative to claims 1 and 11, described above. For at least these reasons, and further in view of their own features, claims 9 and 16 are patentable over the combination of Barton, Yeap, and Agee. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Yeap, and Liu

Claim 18 was rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Yeap as applied to claim 1 and further in view of Liu, et al, U.S. Patent No. 6,442,195 (Liu). Applicant respectfully traverses this rejection.

Claim 18 depends from claim 11. Liu does not overcome all of the deficiencies of Barton and Yeap relative to claim 11, described above. For at least these reasons, and further in view of its own features, claim 18 is patentable over the combination of Barton, Yeap, and Liu. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Barton, Yeap, and Kahre

Claims 19 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Barton and Yeap as applied to claim 1 above and further in view of Kahre, U.S. Patent No. 5,680,388 (Kahre). Applicant respectfully traverses this rejection.

Claims 19 and 20 depend from claim 11. Kahre does not overcome all of the deficiencies of Barton and Yeap relative to claim 11, described above. For at least these reasons, and further in view of their own features, claims 19 and 20 are patentable over the combination of Barton, Yeap, and Kahre. Reconsideration and withdrawal of the ground of rejection is therefore respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the

Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

A handwritten signature in black ink, appearing to read "Lori A. Gordon", written in a cursive style.

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